



Defense Energy Support Center

**Defense Energy Support Center**

**Product  
Technology  
&  
Standardization  
Division**

**Alternative Fuels Information Station**

# EPAct Tutorial



# Learning Objectives



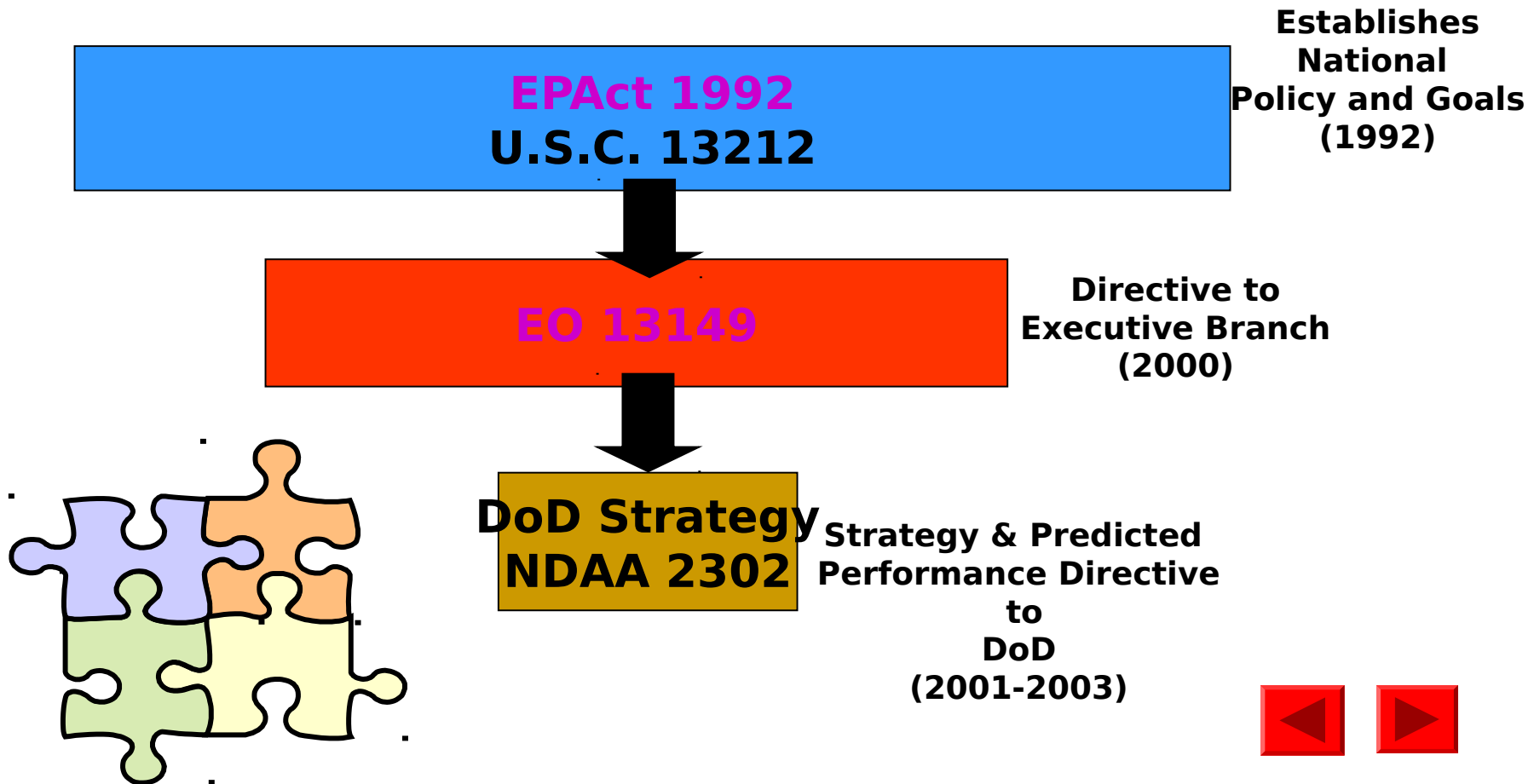
*You should learn....*

- How the Energy Policy Act (EPAAct) applies to motor vehicles
- How compliance with EPAAct is performed (within the Department of D
- What are EPAAct credits and how they are used to measure compliance
- The definition of alternative fuels and alternative fuel vehicles



# EPAct and You

## Understanding the Relationships of the Directives



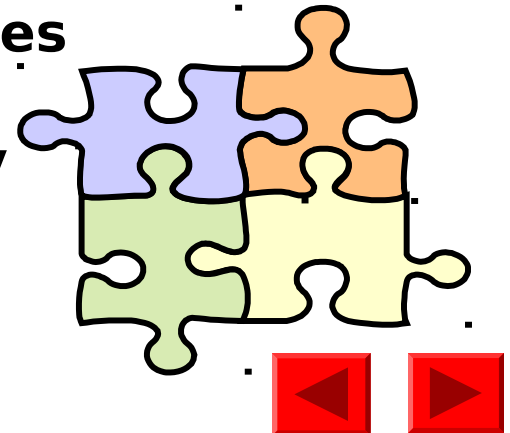
# Purpose of EPAAct

**EPAAct 1992**



## **Purpose**

- 1. Established a National Energy Policy & Goals**
- 2. Enhanced Energy Security Policies**
- 3. Improved Environmental Quality**



# EPAct & Alternative Fuels

**EPAct 1992**



## **Definitions of Alternative Fuels**

- **Alcohols: Ethanol**
- **Gasoline with 85% mixtures of Alcohol**
- **Natural Gas and other domestic fuels derived from Natural Gas**
- **Liquefied petroleum gas**
- **Hydrogen and electricity**
- **Bio-Diesels (B20)**



# E.O. 13149: Major Objectives



Objective: ***"Each agency operating 20+ vehicles within the US shall reduce its entire fleet's annual petroleum consumption by at least 20% by the end of FY 2005, compared with FY 1999 petroleum consumption levels."***



Two Required Approaches:

**\* Military/Tactical Vehicles are excluded**

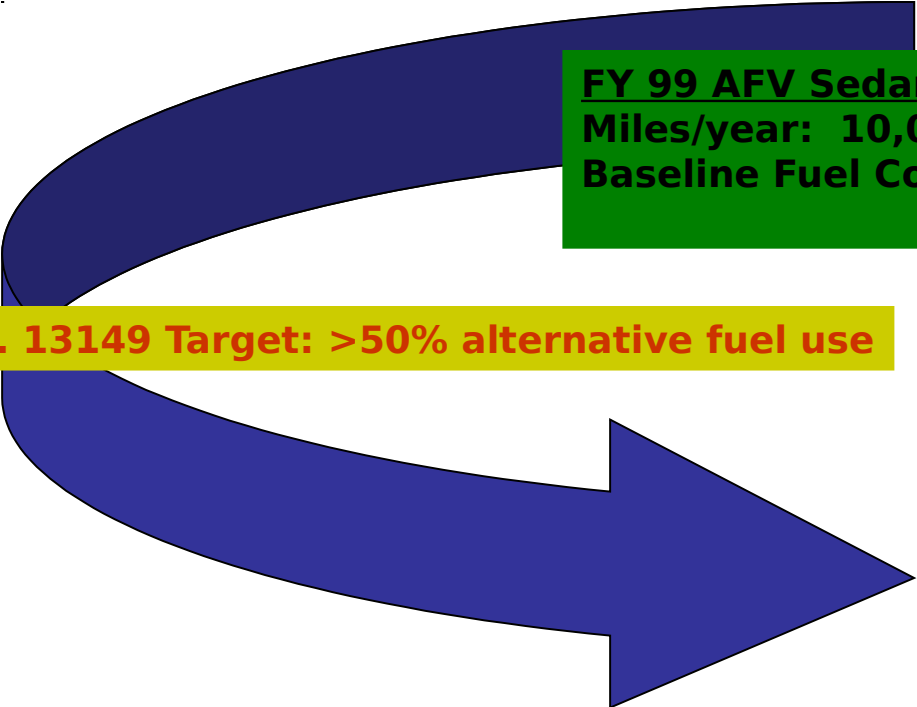
- **Acquisition of alternative fuel vehicles (AFVs) plus use of alternative fuels in the fleet (the majority of the time the vehicles are in operation)**
- **Acquisition of higher fuel economy vehicles**



**Note: EO 13149 measures progress of first approach by issuing EPA Act Credits.**

# Use of Alternative Fuels in Alternative Fuel Vehicles

*Example of Petroleum Displacement Achieved by Using Alternative Fuel*



FY 99 AFV Sedan, rated for 25 miles/gal  
Miles/year: 10,000  
Baseline Fuel Consumption: 400 gallons/year

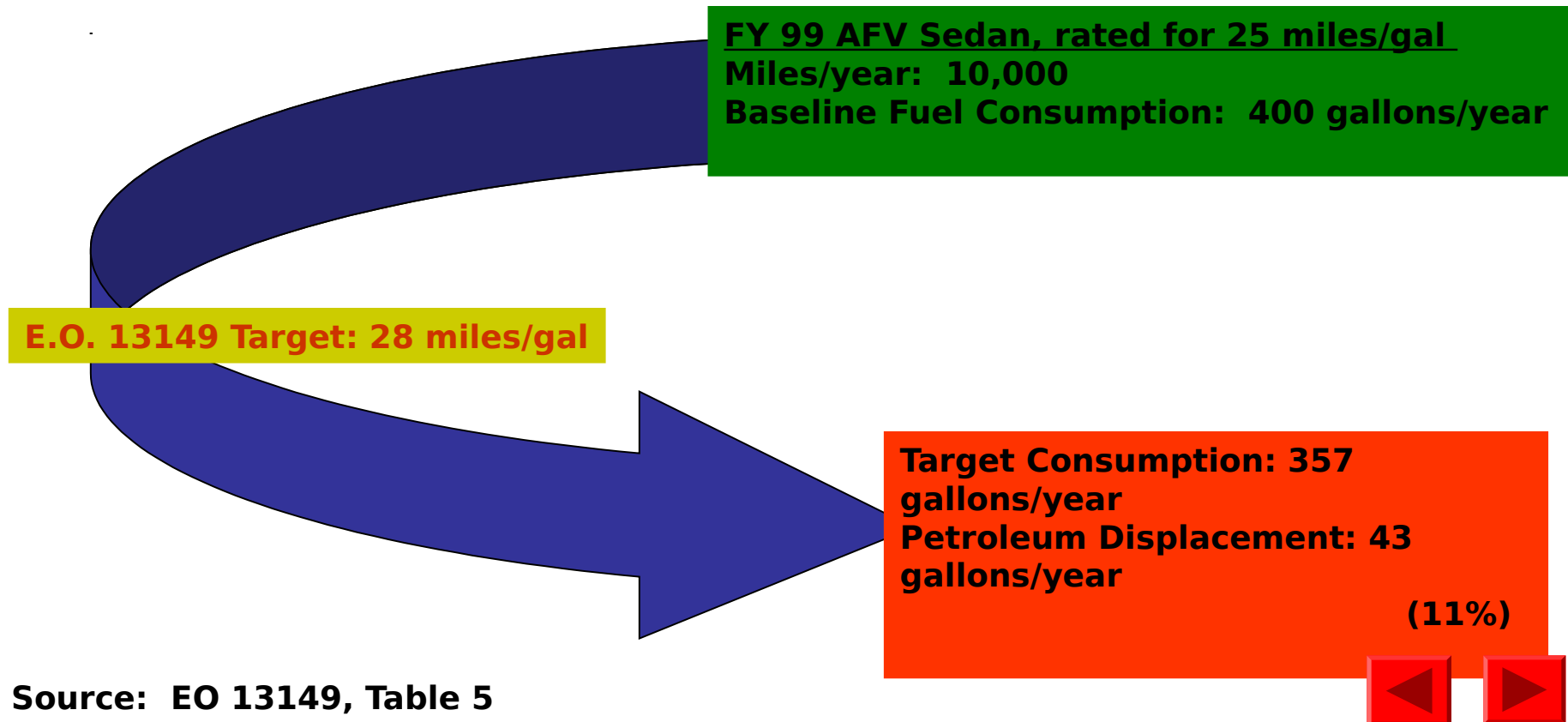
**E.O. 13149 Target: >50% alternative fuel use**

**Target Consumption: 200 gallons/year**  
**Petroleum Displacement: 200 gallons/**  
**(50%)**



# Use of Alternative Fuels in Alternative Fuel Vehicles

*Example of Petroleum Displacement Achieved by Increased Fuel Economy*





# What is an Alternative Fuel Vehicle (AFV)?

**EPA Act 1992**

**EO 13149 (April 2000)**



*“A dedicated, flexible fuel, bi-fuel, or dual fuel vehicle powered alternative fuel”*

*-Guidance Document: Greening the Government through Federal Fleet and Transportation Efficiency ,October 2000*

- ❖ **Bi-Fuel Vehicles have two separate fuel systems:**
  - 1. Alternative Fuel**
  - 2. Conventional Fuel**
- ❖ **Dual-Fuel Vehicles have two separate fuel storage systems and operates on a mixture of alternative fuel and petroleum based fuels**
- ❖ **Flexible Fuel Vehicles have a single storage tank capable of operating on an alternative fuel, a petroleum based fuel, or a mixture of the two fuels**



# Vehicle Classifications

**GVWR= Gross Vehicle Weight Rating; the weight of a vehicle including payload**

Light Duty Vehicle- A vehicle weighing 8,500 lbs GVWR or less

Example:



Medium Duty Vehicle- Vehicle between 8,500 and 16,000 lbs GVWR

Example:

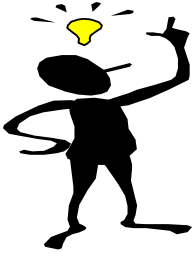


Heavy Duty Vehicle- Vehicle weighing more than 16,000 lbs GVWR

Example:

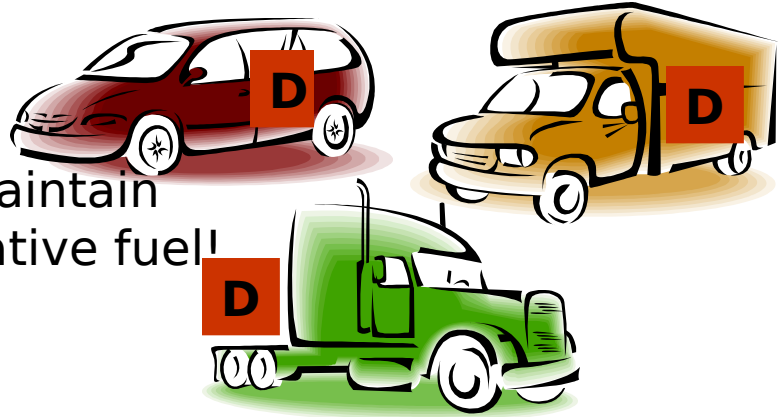


# Dedicated Alternative Fuel Vehicles



Motor Vehicles that are designed to operate solely on alternative

Dedicated AFVs & Electric vehicles receive additional EPA credits in order to maintain emphasis on use of alternative fuel!

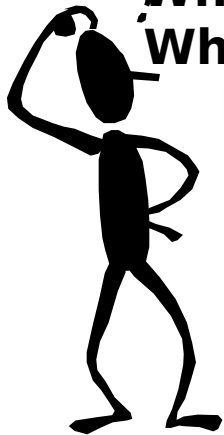


# Vehicle Credits for EPOct Compliance

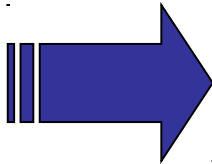
**EPOct 1992**



**EO 13149 (April 2000)**



**What is an EPOct credit?  
What are they used for?  
How do they work?**



**EPOct Credits are units of measure assigned by Dept of Energy  
to assess the compliance of a federal agency toward  
the EPOct AFV acquisition goals**

**Agencies earn AFV credits toward EPOct compliance for e  
AFV acquisition**



# Multiple EPOct Credit Scenarios

**EPOct 1992**

**E.O. 13149**



Credits Awarded	Situation Earning Credits
1	A light-duty, alternative fuel vehicle
2	A dedicated light-duty vehicle
3	A dedicated medium-duty, alternative fuel vehicle
4	A dedicated heavy-duty, alternative fuel vehicle
<b>1</b>	<b>For every 450 gallons of pure biodiesel (equivalent to 2,250 gallons of B-20) used in diesel vehicles with earned credits of up to 50% of EPOct requirements only.</b>



# EPAct Credits

EPAct 1992



EO 13149 (April 2000)



## How do EPAct credits work?

### Agency A Purchases

5 Light Duty AFVs  
(non-dedicated)

### Agency B Purchases

3 Light Duty AFVs (non-dedicated)  
1 Dedicated Medium Duty AFVs

***Which Agency will be credited more EPAct Credits??????***



# EPAct Credits Example

EPAct 1992

EO 13149 (April 2000)



! How do EPAct credits work?

Agency A Purchases

5 Light Duty AFVs (non-dedicated)

5 EPAct Credits

Agency B Purchases

3 Light Duty AFVs (non-dedicated)

1 Dedicated Medium Duty AFVs

6 EPAct Credits (Dedicated Medium Duty AFVs count as 3 Credits)

***Which Agency will be credited more EPAct Credits??????***

**Agency B will actually receive more credits in this scenario!!**

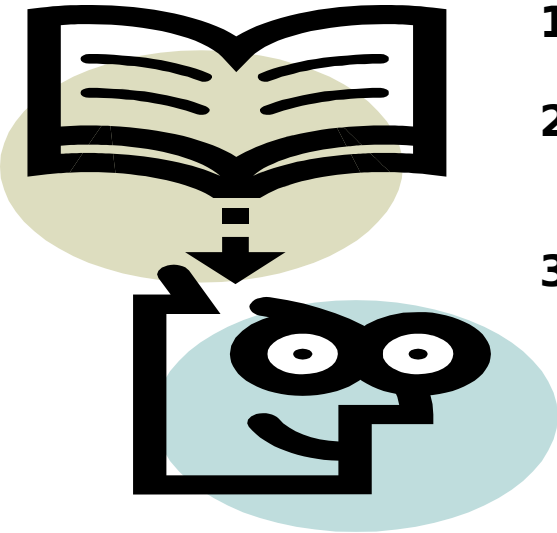


# Other Important Things To Know

**EPAct 1992**



**EO 13149 (April 2000)**

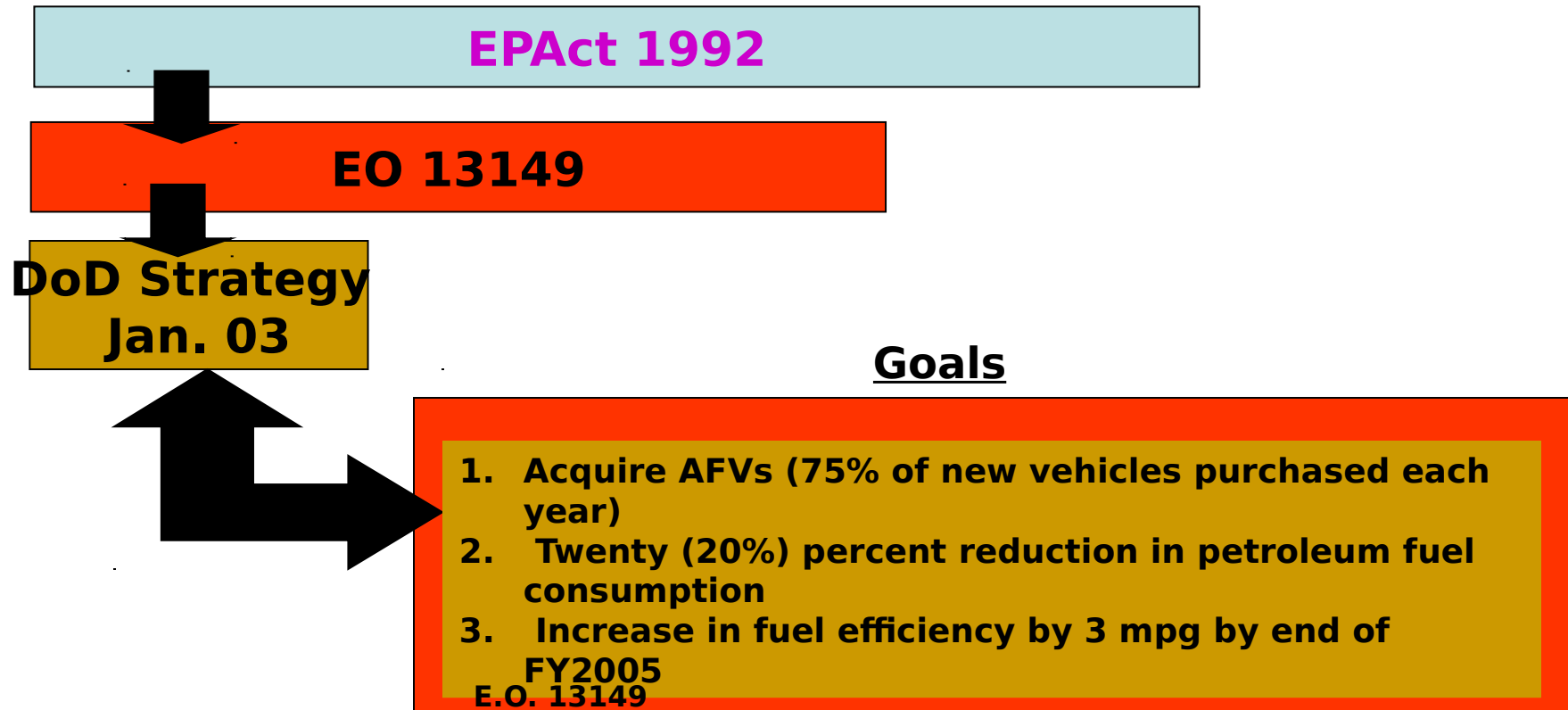


1. **After 1999, 75% of all vehicles purchase must be AFV**
2. **No more than 50% of your yearly EPAct credits can be Biodiesel Fuel based!**
3. **Agencies are expected to increase the fuel economy of the vehicle fleet (need 3 mpg improvement by 2001 1999 baseline)!**

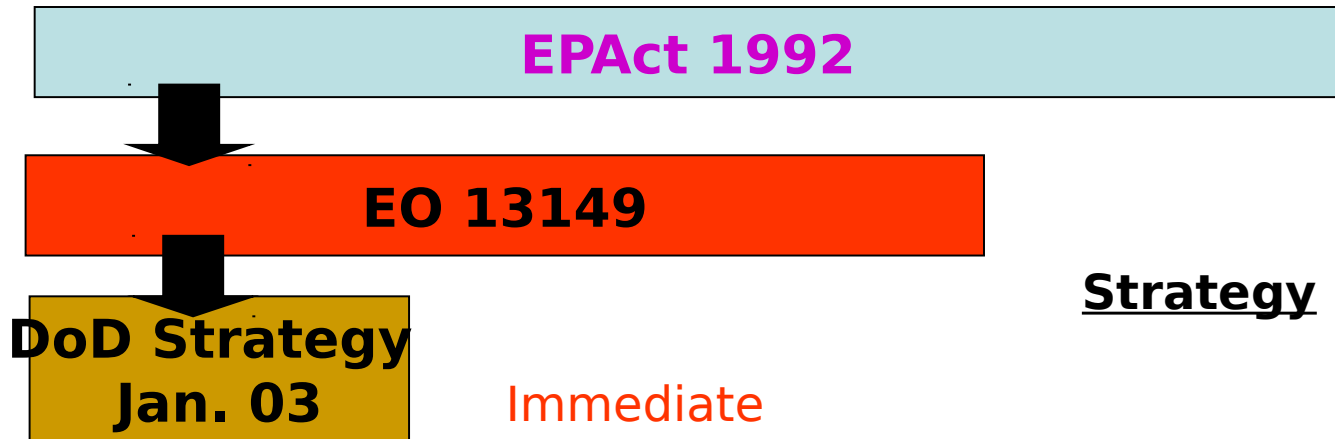




# DoD Strategy for Compliance with E.O. 13149



# DoD Strategy (con't)



## Strategy

### Immediate

- Rely on commercial alternative fuel infrastructure
- Concentrate on compressed natural gas (CNG)
- Use Electric Vehicles where appropriate (short distances)

### Near Term (2-5 Years)

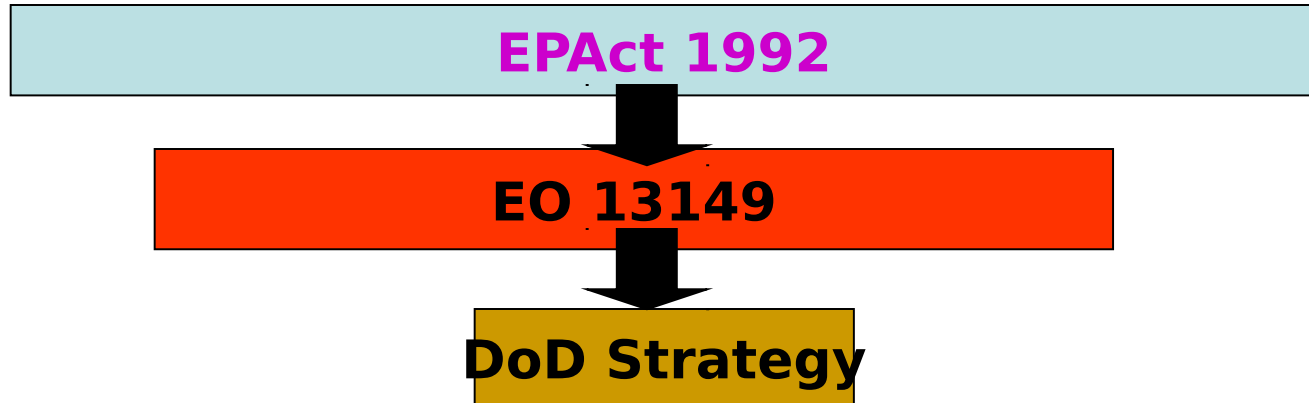
- Develop and implement Biodiesel products, specifically B20
- Use Hybrid vehicles to reduce petroleum consumption
- Work with OEMs to test & warranty biodiesel products in die
- Develop and implement Ethanol products, specifically E85

### Long Term (5-20 Years)

- Develop and deploy hydrogen fuel cells as an alternate fuel
- Incorporate next generation electric cars (longer distances)



# Summary



***The listener should now understand.....***

- How the Energy Policy Act (EPO) applies to motor vehicles
- How compliance with EPO is performed (within the Department of Defense)
- What are EPO credits and how they are used to measure compliance
- The definition of alternative fuels and alternative fuel vehicles

